PATENT SPECIFICATION

Application Date: March 31, 1926. No. 8690/26. 270,067

Complete Left: Dec. 22, 1926.

Complete Accepted: May 5, 1927.

PROVISIONAL SPECIFICATION.

Improvements in or relating to Bedsteads.

We, HERBERT RONALD HOSKINS, a British subject, and HOSKINS AND SEWELL LIMITED, a company incorporated under the laws of Great Britain, both of Bordesley, Birmingham, do hereby declare the nature of this invention to be as follows:—

This invention relates to improvements in bedsteads, and refers more particularly to bedsteads such as are intended for use in the wards or verandas of hospitals, and has for its object to provide means whereby bedsteads, fitted with suitable casters adapted to permit of easy movement or transport to any desired position, or from one ward to another ward or place, are adapted to be firmly fixed and prevented from movement after being placed in the desired position, in order that they may be kept in straight lines in hospital wards or like places, and prevented from being inadvertently or accidentally displaced or moved out of alignment.

The invention consists in the provision of means whereby the foot of the bedstead can be readily and easily raised sufficient to lift the casters clear of contact with the floor, and be supported on rubber or like pads, characterized by the employment of spring controlled rods slidably mounted in the legs of the foot of the bedstead, the said rods being provided at their lower ends with suitable pads, and are adapted to be simultaneously depressed against their springs by means of suitable mechanism, whereby the pads are moved into contact with the floor, and the foot of the bedstead raised sufficient to lift the casters out of action.

According to one practical embodiment of this invention we slidably mount in each tubular member forming the legs of the foot of the bedstead, a rod which is arranged to pass through a central hole formed in the usual lug secured to the lower end of each leg and adapted to swivelly carry the caster horns, and to the lower protruding end of the aforesaid rod is secured a pad of rubber or like suitable material. To the upper end of each of the aforesaid rods is fixed a circular bearing pad or block which is adapted to slide within the tubular leg and provides an abutment for a spiral spring the lower end of which latter rests on the lug fixed in the lower end of the tubular leg and arranged to carry the caster horns, the said spring being adapted to normally hold the pad in its raised position clear of the floor.

The means for depressing the aforesaid rods carrying the supporting pads, comprise a transverse rod or shaft rotatably supported between the two legs of the foot of the bedstead, the ends of the said rod being carried in suitable lugs mounted on the tubular legs, and have fixed thereto cams which are arranged to engage with the upper face of the bearing pads or blocks mounted on the upper ends of the sliding rods carrying the rubber or like pads, the aforesaid bearing lugs being shaped and adapted to form a housing for the said operating cams.

To the aforesaid transverse rod or shaft is fixed an operating arm or lever, which is preferably arranged to assume a vertical position when the supporting pads are in their raised or inoperative position. Upon moving the operating arm or lever inward to a horizontal position, the cams simultaneously move or depress the sliding rods against their springs, moving the rubber or like pads on the lower end of the said rods into contact with the floor and cause the foot of the bed to be raised sufficient to lift the

casters out of action, and by reason of their contact with the floor constitute a fixed or not readily movable support for the bedstead. On the face of the cams is formed a flat which engages with the face of the bearing pads when the rods are moved to their depressed position, and is adapted to hold or secure them in such position, but will permit of their ready release upon the forward or return movement of the operating arm or lever.

Dated this 30th day of March, 1926.

ERNEST W. JONES,
Agent for the Applicants.

COMPLETE SPECIFICATION.

Improvements in or relating to Bedsteads.

We, HERBERT RONALD HOSKINS, a British subject, and HOSKINS AND SEWELL LIMITED, a company incorporated under the laws of Great Britain, both of Bordesley, Birmingham, do hereby declare the nature of this invention and in what manner the same is to be performed, to be particularly described and ascertained in and by the following statement:—

This invention relates to improvements in bedsteads intended for use in the wards or verandas of hospitals, and refers more particularly to bedsteads of the kind provided with casters and stump feet adapted to be alternately moved into contact with the floor, to permit when desired of easy movement or transport of the bedstead to any desired position as from one ward or place to another, or to firmly fix and prevent same from being inadvertently or accidentally displaced or moved from any desired position.

The invention has for its object to provide improved and simplified means for operating the stump feet of bedsteads of the aforesaid kind, which do not to any great extent detract from the normal appearance of the bedstead, and further do not provide any protruding parts which are liable to cause obstruction of any kind.

We are aware that it has been previously proposed to provide operation tables for surgical use wherein the legs of an under-frame of the table are provided with casters and feet, the latter having stem parts guided in the legs and provided with pins which pass through slots in the inner sides of the legs and engage with slots in levers fixed to cross rods, the latter being connected by lever or link mechanism so as to work synchronously, and one of the said cross rods is operable by a bell-crank hand lever whereby all the feet can be depressed and all the casters raised off the ground. It has also been proposed to provide an operating table wherein legs are raised off the ground by means of casters carried on rods slidably mounted in the legs of the table and adapted to be depressed against spring pressure by means of horizontally movable wedges carried in brackets mounted on the legs on each side of the table and arranged to engage with rollers mounted on the upper ends of the rods carrying the casters, the said wedges being connected by rods, and actuated by toothed quadrant levers, located at one end of the table and arranged to engage with racks formed on the wedges whereby the casters can be depressed.

The invention consists in the provision of means whereby the foot or the head of the bedstead can be readily and easily raised sufficiently to lift the casters clear of contact with the floor, and be supported on rubber or like pads, characterized by the employment of spring-controlled rods slidably mounted in the legs at either the foot or head of the bedstead, and provided at their lower ends with pads or feet, a transverse shaft supported in lugs or bearings fitted to the legs at one end of the bedstead, cams fixed to the said transverse shaft and housed within the aforesaid bearing lugs, and arranged to engage with cam blocks fitted to the upper ends of the rods carrying the pads or feet, an operating arm or lever secured to the transverse shaft and adapted by a part turning movement to simultaneously move the pads or feet into contact with the floor and raise the foot or head of the bedstead sufficient to lift the casters out of action.

Having set forth the characteristic features of our invention we will now proceed to more fully describe same with reference to the accompanying drawings, in which:—

Figure 1 shows a perspective end elevation of a bedstead constructed in accordance with this invention, showing the casters in their lowered or operative position, to facilitate the easy movement of the bedstead.

Figure 2 is a similar view to that of Figure 1, but shows the casters raised and the pads moved into contact with the floor to prevent movement or displacement of the bedstead.

Figure 3 shows a longitudinal section of one of the legs fitted with mechanism constructed in accordance with our invention, wherein the mechanism is shown in its raised position with the caster in contact with the floor.

Figure 4 is a similar view to that of Figure 3 but shows the mechanism in its lowered position and the caster moved clear of the floor.

Figure 5 shows an end view of the bedstead with the mechanism in its lowered position, as seen in Figure 4.

Figure 6 shows an elevation and a plan view of the socket or sleeve adapted to be mounted in the lower end of the tubular leg of the bedstead and swivelly carry the horns of a caster fitted with bearing balls.

According to one practical embodiment of this invention we slidably mount in each tubular member 1 forming the legs of the foot of the bedstead, a rod 2 which is arranged to pass through a sleeve part 3 fixed in the lower end of the leg and adapted to have swivelly connected thereto a caster 4, the said sleeve part having formed in its lower stem part 5 an annular groove 6 which is engaged by a screw or peg 7 fixed in the caster horn 8, whereby the latter is swivelly retained on the leg of the bedstead. In the upper part of the caster horn is formed a bearing race to receive bearing balls 9, which engage with the face 10 on the sleeve part 3, and thus form an anti-friction bearing.

To the lower protruding end of the aforesaid rods 2 is secured a pad 11 of rubber or like suitable material, and to the upper end of each of the aforesaid rods is fixed a circular bearing or cam block 12 which provides an abutment for a spiral spring 13 interposed between the said cam blocks 12, and the sleeve 3 fixed in the lower end of the tubular leg 1, the said spring being adapted to normally hold the pad 11 in its raised position clear of the floor, as seen in Figures 1 and 3.

The means for depressing the aforesaid rods 2 carrying the supporting pads 11, comprises a transverse rod or shaft 14 rotatably supported between the two legs of the foot of the bedstead, the ends of the said rod being carried in suitable lugs 15 mounted on the tubular legs 1, and having fixed thereto cams 16 which are arranged to engage with the upper face of the bearing or cam blocks 12 mounted on the upper ends of the sliding rods 2 carrying the rubber or like pads 11, the aforesaid bearing lugs being shaped and adapted to form a housing for the said operating cams. In the upper face of the bearing or cam blocks 12 we preferably form a transverse groove 17 suitably shaped for engagement with the cams 16, and in order to prevent displacement of the said cam grooves from alignment and engagement with the cams 16 we form in or on the rods 2 a longitudinal groove or flat 18 which is engaged by a screw or peg 19 fitted in the sleeves 3 fixed in the lower ends of the legs 1, whereby a turning movement of the said rods is prevented. The central portion of the shaft 14 is preferably of tubular formation and secured by brazing or otherwise to the ends of the shaft which are adapted to carry the cams 16, the aforesaid arrangement being adapted to provide simple means for disposing the cams in operative relation to the rods 2 in the legs 1 of the bedstead, and being further adapted to facilitate the production of shafts of various lengths.

To the aforesaid transverse rod or shaft 14 is fixed an operating arm or lever 20, which is preferably arranged to assume an approximately vertical position when the supporting pads 11 are in their raised or inoperative position. Upon moving the operating arm or lever 20 downward to an approximately horizontal position, the cams 16 simultaneously move or depress the sliding rods 2 against their springs 13, moving the rubber or like pads 11 on the lower end of the said rods into contact with the floor and causing the foot of the bedstead to be raised sufficiently to lift the casters out of action, as seen in Figures 2, 4 and 5, and constitutes a fixed or not readily movable support for the bedstead. On the face of the cams 16 is formed a flat face 21 which engages with the face of the bearing cam blocks 12 when the rods 2 are moved to their depressed position, and is adapted to hold or secure them in such position, but will permit of their ready release upon the upward or return movement of the operating arm or lever.

Although we have shown our invention in its application to the foot of a bedstead, it will be readily understood that it is also applicable for use at the head of the bedstead, either independently or in conjunction with mechanism fitted to the foot of the bedstead.

Having now particularly described and ascertained the nature of our said invention and in what manner the same is to

be performed, we declare that what we claim is:—

1. A bedstead of the kind herein referred to, characterized by the employment of spring controlled rods slidably mounted in the legs at either the foot or head of the bedstead and provided at their lower ends with pads or feet, a transverse shaft supported in lugs or bearings fitted to the legs at one end of the bedstead, cams fixed to the said transverse shaft and housed within the aforesaid bearing lugs and arranged to engage with cam blocks fitted to the upper ends of the rods carrying the pads or feet, an operating arm or lever secured to the transverse shaft and adapted by a part turning movement to simultaneously move the pads or feet into contact with the floor and raise the foot or head of the bedstead sufficient to lift the casters out of action.

2. A bedstead as claimed in Claim 1, wherein a sleeve fitted to the lower end of the tubular members forming the legs of the foot or head of the bedstead, is adapted slidably to support the rod carrying the pads, and is also adapted to have swivelly mounted thereon a caster, substantially as described.

3. A bedstead as claimed in Claim 1, wherein the cam blocks on the upper end of the sliding rods have formed in their upper face a transverse groove for engagement with the cams, and the said rods have formed thereon a longitudinal key way slot or flat face arranged to engage with a screw or peg mounted in the sleeve part fitted to the lower end of the legs, and adapted to prevent turning movement of the said rods, substantially as described.

4. A bedstead as claimed in Claim 1, wherein the transverse shaft carrying at its ends the cams of the operating mechanism, is formed with a central tubular member, substantially as described.

5. A bedstead constructed, arranged and adapted to be operated substantially as described with reference to the accompanying drawings.

Dated this 21st day of December, 1926.

ERNEST W. JONES,
Agent for the Applicants.

Redhill: Printed for His Majesty's Stationery Office, by Love & Malcomson, Ltd.—1927.

[This Drawing is a reproduction of the Original on a reduced scale.]

FIG. 1.

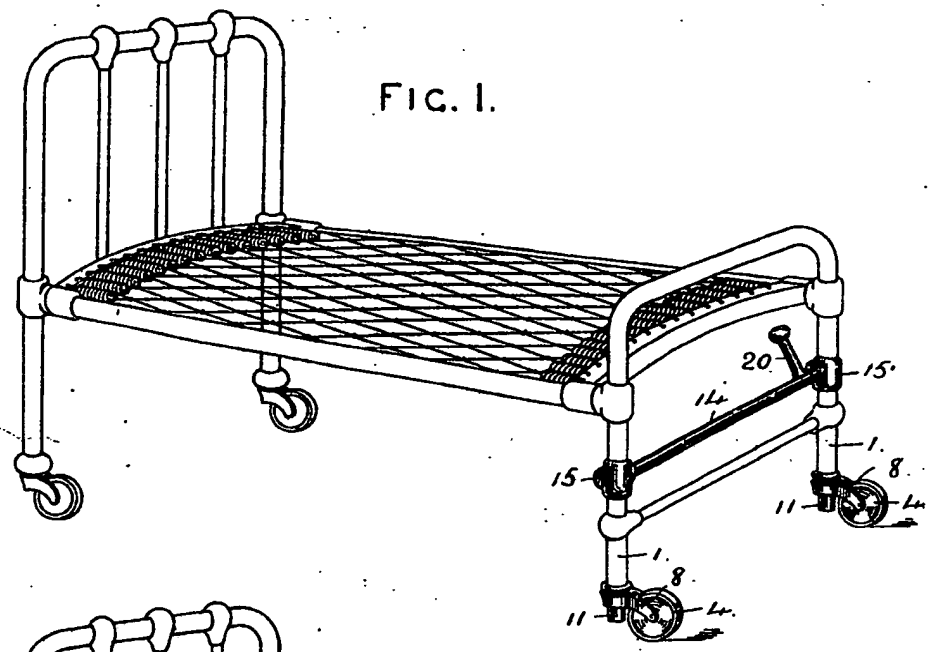

FIG. 2.

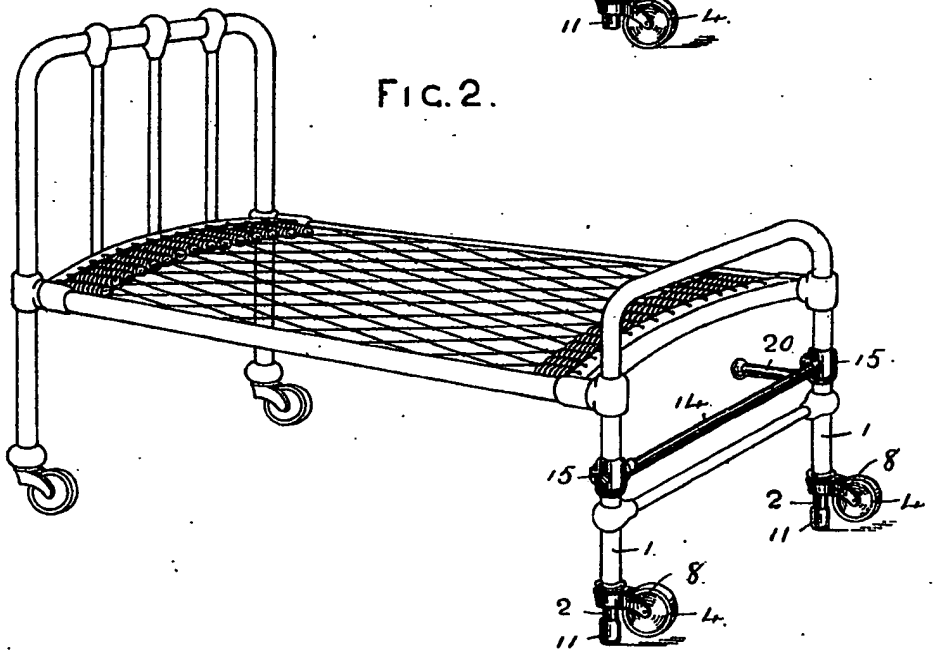

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FIG. 3.

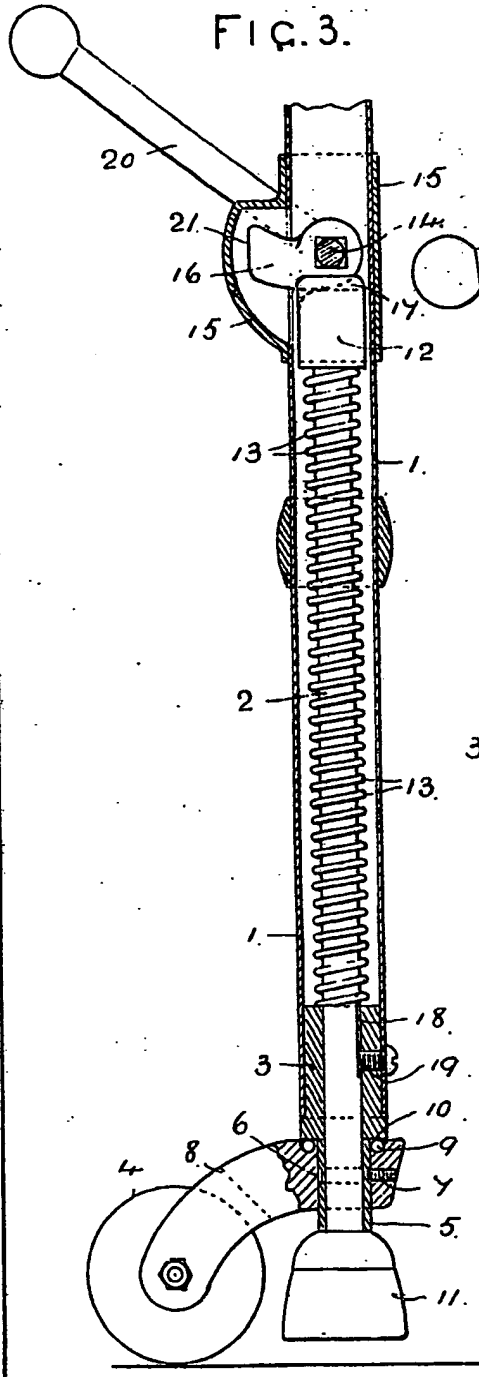
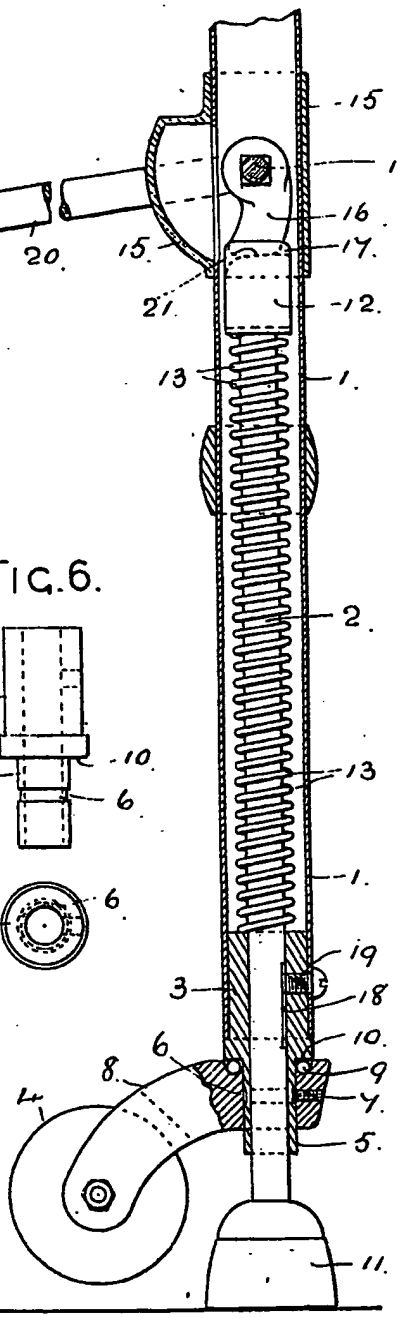


FIG. 4.



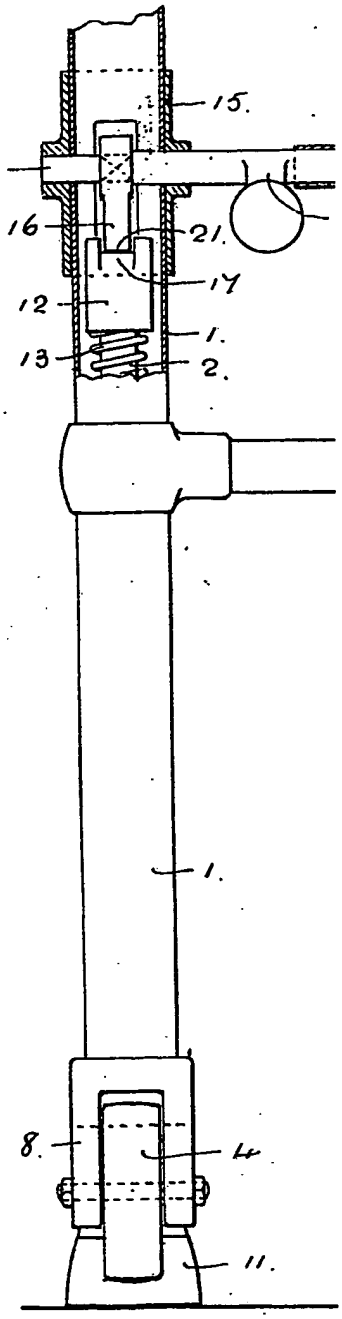
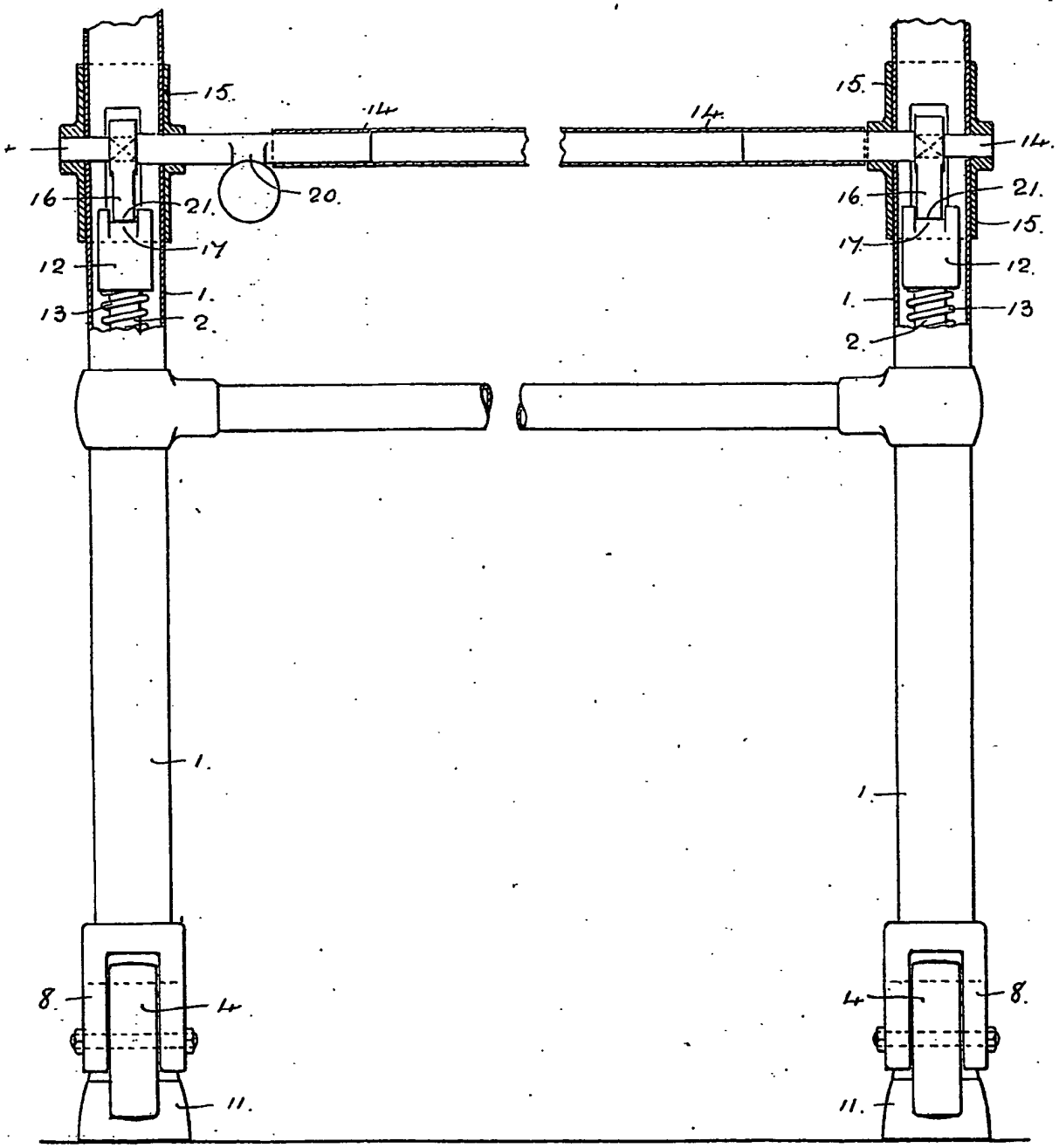


FIG. 6.

FIG. 5.



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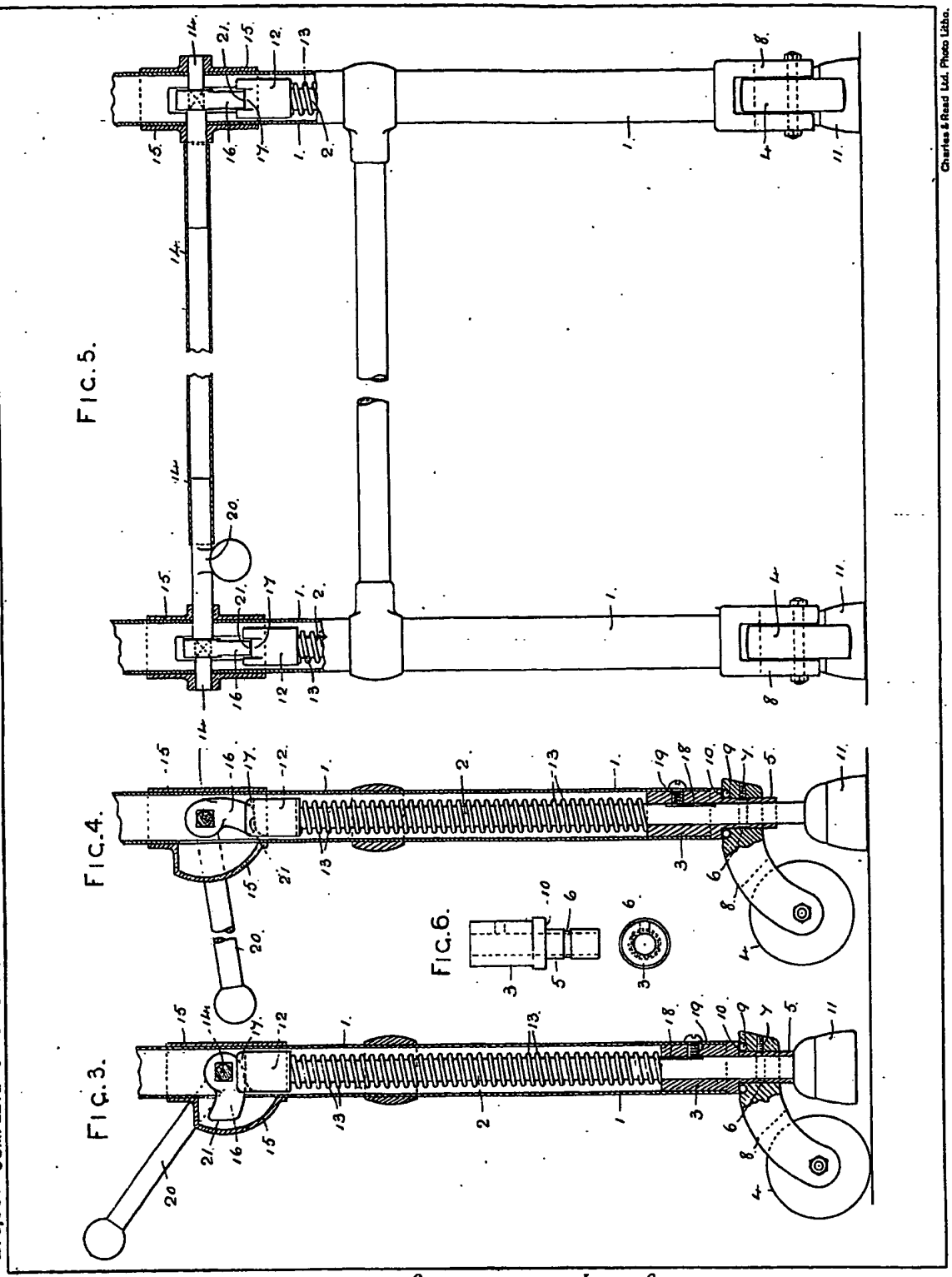

FIG. 5.

FIG. 4.

FIG. 6.

FIG. 3.

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